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THE UNIVERSITY OF ALBERTA

REFLECTIONS OF THE SOCIAL FORECASTING LITERATURE IN REPORTS OF LIBRARY CONFERENCES ATTENDED BY WESTERN CANADIAN LIBRARIANS FROM 1980 TO 1986

BY

© LESLIE AITKEN-LaFLEUR

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF LIBRARY SCIENCE

FACULTY OF LIBRARY SCIENCE

EDMONTON, ALBERTA

(FALL 1988)

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled "Reflections of the Social Forecasting Literature in Reports of Library Conferences Attended by Western Canadian Librarians From 1980 to 1986" submitted by Leslie Marilynn Aitken-LaFleur in partial fulfilment of the requirements for the degree of MASTER OF LIBRARY SCIENCE.

(Dr. S. Bertram, Supervisor)

(Professor D. Oberg)

(Dr. A. M. Schrader)

Date: June 10, 1988

To Ray

whose "affirmative action"
in the kitchen left me free
to consult my muse.

ABSTRACT

The study explores the hypothesis that the social forecasting literature is reflected in what is written about library conferences and workshops attended by Western Canadian librarians from 1980 through 1986. The historical method of approach is chosen. A wide range of literature is searched for two purposes: first, to establish the existence of any similar studies; second, to select an appropriate sample of forecasting literature. Seven recent works of social forecasting literature are reviewed. The major themes of the works are summarized as "key concepts". Documented reports of appropriate conferences and workshops are analyzed for evidence of the key concepts. The study concludes that the evidence supports the hypothesis.

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I. INTRODUCTION

From 1948 when the transistor was invented, to the 1980's when microcomputers began to flood the consumer market, the advance of technology revolutionized the ways in which human beings could produce goods and store, process and communicate ideas. As the advance in electronic technology proceeded, it brought about social and psychological changes that generated great concern among social scientists and humanists. The concern was expressed in writing. A body of literature arose forecasting the social impact of electronic technology. Some of the literature was well researched and scholarly; some of it was well referenced, but general in its approach; some of it was opinionated and unresearched.

Meanwhile, electronic technology found its way into the library world in many forms: on-line catalogues and circulation systems, automated office management systems, bibliographic networks. From the mid-1960's to the mid-1980's libraries became increasingly automated. Librarians concerned themselves with the practical applications of advanced electronic technology as if they were automating an industry, an information industry.

Libraries, however, are more than information industries; they are social institutions as well. The question naturally arises: Do librarians share with the social scientists and humanists mutual concerns about the social impact of advanced electronic technology?

Almost as naturally, because the librarian's stock-in-trade is literature in all its variant forms, the question arises: Were librarians cognizant of the ideas in the social forecasting literature?

The object of the current work was to answer these questions. In order to do so, it would be necessary to measure librarians' cognizance of, and concern with specific issues explored in the social forecasting literature. One approach considered was a questionnaire which might ask librarians whether or not they had read certain works dealing with the social impact of advanced electronic technology. The problems with that approach were readily apparent. There are ways of knowing about the content of a book other than by reading it: one might read a review or hear a review over the radio or on television; one might pick up a book's major ideas through a conversation or by listening to a lecture or a speech; one might even glean a considerable amount of insight into a book's content by perusing a catalogue or an annotated bibliography. A questionnaire would have to address all of these possibilities, and still answer a further question: did acquaintanceship with the contents of a book generate concern?

There seemed to be a more straightforward approach: the historical analysis of the conference literature. What librarians discussed or heard discussed at their conferences could be taken as evidence of their professional concerns. If what was said at conferences and what was written about them could be linked to the ideas contained in the social forecasting literature, the questions could be answered. It seemed quite possible to search for similarities between ideas appearing in conference reports, and ideas in the social forecasting literature. This possibility gave rise to the research hypothesis.

A. Research Hypothesis

This study explores the hypothesis that the social forecasting literature is reflected in what is written about library conferences and workshops attended by Western Canadian librarians from 1980 through 1986. Because of the nature of the thesis objective, the approach is qualtitative rather than quantitative.

B. Assumptions

The major assumption underlying this thesis is that reflections of the social forecasting literature in conference or workshop presentations during the period under investigation can be taken as evidence that librarians shared with the social forecasters mutual concern about the impact of electronic technology on social institutions.

A second assumption is that topics discussed at library conferences and workshops during this time reflected the concerns and interests of the conference delegates, not just the conference planners.

A third assumption is that during this time printed works adequately reflected the concerns of social forecasters.

The first and third assumptions open questions regarding the exact extent to which the literature (the conference speeches as reported, the printed books) represented general professional concern. Some degree of representation must be assumed. It is a professional expectation of librarians that some will express and disseminate their ideas through conferences and conference reports. Similarily, it is a

professional expectation of social scientists and humanists that some will write books.

There is a fourth, perhaps less obvious, assumption underlying this thesis: even a single line of reported evidence is significant. There is a constant ebb and flow of ideas into print and arising from print. Ideas that take shape in the course of professional observation and discussion are distilled and solidified and captured in print; there, they are seen and give rise to further discussion and observation.

To show at just what point the conference discussion and its reporting result from the ebb and flow of library professional ideas is a separate research project. It is a matter of record, however, that conference discussions find their way into print.

To return to the main point, a single line of print such as a conference announcement, may be evidence of an idea or a concern developing in the collective professional mind and, hence, can be considered relevant to this research.

C. Definitions

"Social forecasting" is used in the sense that Daniel Bell uses it when he discusses the process of delineating "projected changes in major social frameworks." (Bell, 1976, p.7) Bell explains that forecasting allows us "to identify an 'agenda of questions' that will confront society and have to be solved." (p.9)

"Social forecasters" write social forecasting literature; they may be social scientists, humanists, or free lance writers.

For the purposes of this study, the "social forecasting literature" is restricted to only that literature which deals to some extent with the "agenda of questions that will confront society" in the information environment.

The "literature" means books, and particularly trade publications that meet the criteria established in the section entitled "Selection of Key Works." The key works fall into the second category of writing mentioned in the "Introduction," i.e. works that are "well referenced but general" in their approach. The works were all written in the 1960's, '70's and '80's and dealt in a major way with the advance of electronic technology.

Throughout the study, "major themes" and "key concepts" are used interchangeably to refer to the ideas chosen from the social forecasting literature and sought in conference documentation.

"Conference documentation" refers to what is published about the conferences. It is confined to what is written about those major professional events that might attract Western Canadian librarians -- particularly Albertans. Such events primarily include conferences and workshops sponsored by the Canadian Library Association and the provincial library associations of British Columbia, Alberta, Saskatchewan and Manitoba.

One report covering a library event that was not so sponsored was included because there was good reason to suspect general awareness of that event among Western Canadian librarians. The documentation analysed included Canadian Library Association newsletters and journals, and the

organs of communication of the provincial library associations of Alberta, British Columbia, Saskatchewan and Manitoba. It also included calendars or programs of specific conferences. The documents studied were published in the time frame 1980 to 1986.

The word "reflected" is used here as it is defined in Webster's New World Dictionary."...to give back an image or likeness, to be mirrored." (Webster's, 1956, p.849)

An image of, or likeness to, a social forecaster's ideas could take many forms: direct quotation, paraphrasing, expression of a similar concept in similar terminology, citations of a specific work. Because direct quotation is the most undeniable sort of reflection, its absence or presence is noted throughout the section dealing with "Evidence of the Key Concepts."

"Cognizance" is used in this study as it is defined in Webster's: "...the fact of being aware." (p.284) Cognizance of an idea is assumed if there is evidence that the idea was reflected in the conference documentation.

D. Literature Search

There were two major purposes for searching the literature: one purpose was to determine that no one had done the same research; a second purpose was to identify a suitable sample of social forecasting literature.

First, the DOBIS-mounted portion of the University of Alberta Library's database was searched to see if any trade publications or

research monographs were available on the topic of librarians' concerns with social changes resulting from the advance of electronic technology. The DOBIS database covers material purchased or recatalogued by the University of Alberta from 1974 onward. It therefore covers a major portion of the sociological literature acquired during those years when integrated circuitry began to make its impact on the information processing technologies of the 20th century.

The concept of social change was of paramount importance in the works being sought and so a set of Library of Congress subject headings comprising the terms "Social change", "Social forecasting" and "Future" and all their derivatives was created and searched. This search yielded 743 titles. It was matched against a second set of subject headings comprising "Librarianship", "Librarians" and "Libraries" and all their derivatives, a set yielding 4137 titles. The cross-match of these two sets yielded 0, so it was pointless to look for the third subject, electronic technology.

A new approach was in order. The subject heading "Libraries--Social aspects" was searched and yielded one title:

Bundy, Mary Lee (1980). Helping People Take Control: The Public Library's Mission in a Democracy. College Park, Maryland: Urban Information Interpreters.

Bundy's title was not on the topic of librarians' concerns with social changes resulting from the revolution in electronic technology.

Searching the subject heading "Libraries--Aims and objectives" yielded a general work by British author D. J. Foskett:

Foskett, D. J. (1984). Pathways for Communication: Books and Libraries in the Information Age. London: C. Bingley.

The Foskett work presents a philisophical position of relevance to this study, but it is not in itself a piece of research.

Generally, the DOBIS searches left unanswered the question of whether or not the hypothesis underlying this thesis had been previously pursued. The DOBIS searches also yielded too vast a number of works on "Social change" or "Social forecasting" or the "Future" to help with the problem of selecting a small, representative sample of key works.

Next, Dissertation Abstracts International: A. The Humanities and Social Sciences was searched from volume 31 (1970/71) to volume 46 (1985/86) to see if there were doctoral dissertations dealing with an hypothesis the same as, or similar to the one explored in this thesis. Once again, nothing similar turned up, but the abstracts of two dissertations were of interest. The first was:

> Ahlgren, Alice (1976). "Cost/Utility Implication of Providing On-Line Search Services Through Public Libraries." PhD dissertation, Stanford University.

The Ahlgren study examined whether public libraries were an effective channel through which to provide on-line retrieval service and compared the effect of no-cost to fee-for-service systems on patrons. It concluded that public libraries were an appropriate channel and that an initial no-cost offering of service for six months would spark public interest in on-line searching. Ahlgren's interest in the fee-for-service issues is in itself evidence of professional concern with the social impact of electronic technology.

A second dissertation was of interest because it dealt with conference effectiveness in communicating ideas:

Tassia, Margaret Rose (1978). "Conference Programs as a Vehicle for Continuing Education: A Case Study of an Educational Games Workshop Presented to School Library Media Specialists." PhD dissertation, University of Pittsburgh.

Tassia tested the hypothesis that conferences can provide effective continuing educational experiences for school library media specialists. She used a single session workshop, "Adapting Games to Teach Library Media Skills," to effect changes in participants' knowledge of a particular topic -- imparting library skills.

Tassia's findings suggest that workshop presentations are to an observable extent internalized by delegates; hence it is not unreasonable to suggest that an intellectual concern expressed by a conference or workshop speaker might, similarly, be internalized by the audience. This research suggesting that conferences do make an impact on the audience tended to support the approach taken in this thesis.

The ERIC database was searched for the years 1970 to 1986 for references to journal articles or conference presentations describing librarians' concerns with social change resulting from the electronic technologies. A search using the descriptor "Social change" resulted in a set of 7425 items. The descriptors ["Librarians" or "Library role" or "Library science" or "Librarianship"] resulted in a set of 8134 items. The cross-matched sets produced 50 references. Of the 50 references, 11 specifically mentioned social change, "post-industrial" or "third wave" or the "information" society, or the "megatrends" affecting the social order. The following article was of particular relevance:

Birdsall, William F. (1982). "Librarianship, professionalism and social change." Library Journal, 107:223-226.

This review article identified an important Canadian publication that was used as a key work and reinforced the selection of two other key works.

Once again, no reference from the ERIC search provided a research model for this study although all lent credibility to the supposition that librarians were cognizant of the ideas of the social forecasting literature.

The University of Alberta Theses lists were searched back to 1978 and revealed a University of Alberta Library Science thesis somewhat related to the topic under study:

> Dubrule, Sylvia (1982). "Influences of the new technologies on books by mail libraries." MLS thesis, University of Alberta.

Dubrule's work provided a historical review of the development of the computer and other communications technologies. Dubrule also commented on the implications of the new technologies for society at large and for library managers who must institute automated processes in the library workplace. Her work is evidence that at least one professional librarian is aware of both the new electronic technologies and their social impact. The point of her work is not, however, evidence that such awareness is general among library professionals.

Library Literature was searched manually under the subject headings "Conferences," "In-service education," "Institutes and workshops." Canadian conference coverage in Library Literature is, however, slight, uneven and tardy. For example, the Ontario Library Conference of 1985, "The Future of It" did not appear in Library

Literature until October 1987. There were no references at all to "Libraries 2000 : A Futures Symposium" which was a major item of discussion at the Ontario conference. The "Libraries 2000" workshops in Ontario that were by-products of both the Symposium and the Conference could not be tracked through Library Literature.

The subject headings "Continuing education" and "Surveys--Continuing education" were also traced in Library Literature to determine whether anyone might have articulated a need for professional programs on societal trends. Most articles and surveys that pertained to Canada concerned themselves with the organization, finance and administration of continuing education programs for Canadian librarians. One survey, however, addressed the issue of "precise subject needs";

> Henderson, M.E.P. (1982). "A prairies picture of continuing education needs." Canadian Library Journal, 39: 21-24.

Henderson noted the following specific suggestions for workshops:

> ...management (including public relations); automation, both management and technology; specific techniques, such as chain indexing, report writing, serials management; emerging areas of librarianship, including freelancing, and programming for different sectors of the community; copyright; alternatives to card catalogues, and so forth. (Henderson, 1982, p.23)

To the extent that one can generalize about such briefly worded suggestions, they do seem to be more concerned with the specific skills and techniques of librarianship than with broader philosophical issues such as social change.

One article that came to light as a result of the search of Library Literature proved very interesting:

Pogue, Basil G. (1983). "Chameleon or dinosaur?" Canadian Library Journal, 40:121-122.

Pogue suggested a difference between the library "dinosaurs" who resist change and the "chameleons" who adapt to it. He goes on to point out that,

> Becoming a chameleon means spending time and energy to gain understanding of, and familiarity with societal change and new technologies and their implications for information retrieval and dissemination. (Pogue, 1983, p.121)

Pogue's thoughts were on target for this research, but his article merely stated an opinion and did not provide any references.

Library and Information Science Abstracts (LISA) was consulted under a variety of subject headings: "Conferences", "Research", "Surveys" to determine whether there were any research monographs, theses, conference papers or program plans that explored or surveyed professional concern with societal changes arising from advances in electronic technolgy. The LISA search under the heading "Conferences" gave rise to the following observations:

1. Canadian coverage was very slight.
2. Most of the references to Canadian conferences led to those issues of Canadian Library Journal which covered the annual Canadian Library Association conference.
3. With respect to conference coverage, it seemed almost easier to go to the October issue of each volume of Canadian Library Journal directly than to track CLA conference proceedings through LISA.

"Research into Librarianship" as a subject heading tended to lead to studies of the need for research in librarianship. Useful monographs on the art of library research, and bibliographies of theses and dissertations were cited.

There were valuable sources under the subject heading "Research." One was:

> Coughlin, Caroline and Pamela Snelson (1983). "Searching for research in ACRL conference papers." Journal of Academic Librarianship, 9:21-26.

Coughlin and Snelson employed an analytical technique for determining which conference papers might be considered research papers. Their development of a definition for what constitutes "library research" provided methodological guidance. Their description of a content analysis method derived from the work of Pauline Atherton and Nancy Van de Water helped clarify the inherent nature of content analysys. Further references to their method appear under the section "Methodology."

A second item of interest was the work of joint authors:

> Schlachter, Gail and Dennis Thomison (1982). Library Science Dissertations, 1973-1981: An Annotated Bibliography. Littleton, Colorado: Libraries Unlimited.

This work proved useful in unearthing a dissertation that was of some interest because it explored professional reading habits:

> Bandes, Lucille Coleman (1975). "The Professional reading of teachers as a function of their personal characteristics in interaction with their school environment." DLS dissertation, Columbia University.

Among other things, Bandes examined the relationship between attitude toward teaching and the extent of professional reading.

With respect to the conference documentation, Library Literature

and LISA had proven inadequate, so it was decided that a manual search of Canadian Library Journal, Feliciter, Letter of the LAA, BCLA Reporter, and Saskatchewan Library Focus for the years 1980-1986 would be necessary to locate relevant reports and proceedings. A page by page, issue by issue search yielded a total of 54 relevant news reports and journal articles.

One objective of the literature search had been to unearth studies similar to the one being undertaken. Other literature searches were undertaken for the purpose of identifying key works that might be representative of the literature of social prediction. Perusal of Book Review Digest and the Canadian Book Review Annual under such subject headings as "Forecasting," "Communications," "Telecommunications" and "Social change" led to reviews of quite a number of works, most of which were not appropriate for inclusion in the sample of works on social change resulting from the advance of electronic technology. The method was given up because the initial ERIC search outlined above, and a second search using the descriptors "Futures (of society)" and ["Books-reviews" or "Literature-reviews"] were far more helpful in identifying key works.

II. METHODOLOGY

A. General Approach

In the first phase of the research, the key works of social forecasting literature were selected. Keeping the number of key works very small was necessary as a control over the quantity of data that emerges in this sort of study, so careful guidelines for the selection of key works were developed and followed (see the following section). Each book was read and reviewed for content. The key concepts as they were articulated in the key works were explored and compared, author to author, work to work. Particular note was made of the evolution of ideas from one work to another.

In the second phase of the research, appropriate newsletters and journals were perused for evidence that conference speakers had addressed the key concepts which had been identified in phase one. Wherever possible, direct quotations of the speakers were copied. Whole sentences were extracted to avoid taking phrases out of context. Paraphrasing of speakers' ideas was kept to a minimum to maintain the maximum possible objectivity in a highly interpretive process. The assembled statements were grouped and classed in categories as they related to the key concepts derived from the key works. This process provided evidence that the key concepts of the key works either were, or were not acknowledged, discussed, espoused by, or rejected by librarians at their conferences.

B. Choice of the Key Works

At the outset, ground rules were established for the selection of key works. It was judged inappropriate to the intent of this thesis to

select these works by taking a random sample of sociological ideas as the "test set" with which to compare library conference ideas. Rather, evidence was required that between 1980 and 1986, the ideas of the library profession overlapped the ideas of the social forecasters. It seemed that an overlap might occur where librarians widened their focus by considering the social implications accruing from changing informational needs and formats, and the forecasters narrowed their focus by considering the changed informational means and requirements of society. Therefore, it was decided that the books should contain ideas that had at least the potential to be library conference discussion items. This overall requirement necessitated the establishment of specific selection criteria as listed below:

1. While dealing primarily with sociological or humanistic themes, the works should discuss in a significant way ideas related to information production, recording, access, dissemination and utilization.

2. The works should be written by social scientists or humanists, not librarians.

3. The works should be of general enough interest to be placed in both major public and academic libraries. They would be trade books, not scholarly monographs, government documents or vanity press publications.

4. They should be reviewed in standard sources.

5. They should be current enough to be futuristic in their perspective.

6. The number of works should be kept small. The close reading of

the works, the identification of key concepts was merely the first phase of the research and there were time limitations on this phase.

7. Works with Canadian content would be included even if they did not meet all of the other criteria.

As previously mentioned, the research was initiated with literature searches. To recapitulate, good results were obtained from the two searches of the ERIC system, the first using the descriptors "Futures (of society)" and ["Book reviews" or "Literature reviews"], the second using the descriptors "Social change" and ["Librarians" or "Library role" or "Library science" or "Librarianship"].

From these searches there emerged two key works:

Naisbitt, John (1984). Megatrends: Ten New Directions Transforming Our Lives. 2d ed. New York: Warner Books. (c1982)

Toffler, Alvin (1980). The Third Wave. Toronto: Bantam Books published in association with William Morrow.

Examination of these two works showed that they met the criteria:

1. They dealt in a significant way with the production, dissemination and usage of information in society.

2. They were written by social forecasters, not librarians.

3. They were trade books suitable for both academic and public libraries. An UTLAS search suggested that they were widely held in academic and public libraries in Western Canada.

4. They were cited in Book Review Digest as having been reviewed in Library Journal, the New York Times Book Review and other popular selection sources.

5. They were current, were in fact written within the time frame of the study, 1982, 1980 respectively.

6. They were futuristic in their perspective.

Both Toffler and Naisbitt made reference to one or another edition of the following:

McLuhan, Marshall (1966). Understanding Media: The Extensions of Man. 2d ed. Toronto: Signet Books published in Canada by New American Library of Canada. (c1964)

Bell, Daniel (1976). The Coming of Post-Industrial Society: A Venture in Social Forecasting. 2d ed. New York, Basic Books. (c1973).

Smith, Anthony (1980). Goodbye Gutenberg: The Newspaper Revolution of the 1980's. New York: Oxford University Press.

Understanding Media is classic and is still frequently cited because of the vibrancy and novelty of the author's ideas. The UTLAS search did not reveal widespread public library holdings -- possibly because the work predates the use of UTLAS in some library systems. McLuhan's work statisfied the remainder of the criteria.

Likewise, another work was chosen because it seemed to underlie much of the thinking of Toffler and Naisbitt, Daniel Bell's The Coming of Post-Industrial Society: A Venture in Social Forecasting.

Though its original publication date was 1973, The Coming of Post-Industrial Society was deemed current in terms of the study, particularly because two more authors whose works were selected for the identification of key concepts, Anthony Smith and Sherry Turkle, also cited it. Bell's work met most of the criteria established above except that it was not widely held in public libraries. This may be because the work demands of its reader more specialized knowledge of sociology,

history and economics than do any of the other works.

Though the primary focus of Goodbye Gutenberg is the newspaper industry, Smith has a great deal to say that is of relevance to libraries, librarians and librarianship. As with the works above, Smith's work met the established criteria. Goodbye Gutenberg was also a work written within the time frame of the study.

Of the remaining two titles chosen as key works, one was discovered by means of the literature review, the other was arrived at by chance.

One of the articles brought to light by the second ERIC search turned out to be a review article that explored the theme of libraries in post-industrial society as that theme appeared in journal articles and books, many of them written by librarians. The article excited interest on two counts: first, because it was written by a Canadian, William Birdsall; second because it cited the following work:

Godfrey, David and Douglas Parkhill (Eds.). (1980). Gutenberg Two. Toronto: Press Porcepic.

Gutenberg Two had not achieved the popularity of The Third Wave or Megatrends, nor was it reviewed in Book Review Digest. Still, it did receive favourable notice in Quill and Quire and its content was exactly what one might expect to find at the points of intersection among library science, sociology, and information technology. It also met the criteria in terms of its intended readership, its placement in libraries and its currency. Finally, it was a Canadian work.

The final choice, as indicated above, was arrived at serendipitously:

Turkle, Sherry (1984). The Second Self: Computers and the Human Spirit. New York: A Touchstone book published by Simon and Schuster.

This work was on sale in Vancouver at the time of Expo 1986, which the researcher was visiting. Turkle was in Vancouver that year addressing an educators' conference so her work was prominently displayed in one of the shops. A first examination of the work revealed references to the writings of McLuhan, Bell, Toffler and Naisbitt, which immediately suggested its common intellectual ground with the other works being used to develop key concepts. Later perusal revealed that it satisfied all of the established criteria for selection.

There may exist other works that would have also satisfied the criteria for establishing key concepts for the research. However, there were practical time constraints on this first phase in which key concepts had to be derived from key works. The seven works mentioned above appeared to be adequate choices. Their authors came from diverse backgrounds within the humanities and social sciences: McLuhan, an English professor; Bell, a sociologist; Toffler, a social analyst and popular writer; Smith and Godfrey, freelance writers; Parkhill, a communications expert and civil servant; Naisbitt, a social forecaster; Turkle, a projective psychologist.

The reading level of the works ranged from the very easily read Megatrends to the much more demanding The Coming of Post-Industrial Society, but all were at reading levels appropriate to both public and academic librarians. The vantage points of the authors ranged from that of the social historian, through that of the social psychologist, to that of the socially concerned technologist, but each author at some stage

focused on how people create or assimilate or access or use information. It seemed feasible that key concepts contained in the key works might also be the key concepts which appeared in the speeches delivered at library conferences or workshops.

In summation, based on the criteria discussed above, the seven books chosen as key works were:

Bell, Daniel (1976). The Coming of Post-Industrial Society: A Venture in Social Forecasting. New York: Basic Books (c1973)

Godfrey, David and Douglas Parkhill (Eds.). (1980). Gutenberg Two. Toronto: Press Porcepic.

McLuhan, Marshall (1966). Understanding Media: The Extensions of Man. 2d ed. Toronto: Signet Books published in Canada by New American Library of Canada. (c1964)

Naisbitt, John (1984). Megatrends: Ten New Directions Transforming Our Lives. 2d ed. New York: Warner Books. (c1982)

Smith, Anthony (1980). Goodbye Gutenberg: The Newspaper Revolution of the 1980's. New York: Oxford University Press.

Toffler, Alvin (1980). The Third Wave. Toronto: Bantam Books published in association with William Morrow.

Turkle, Sherry (1984). The Second Self: Computers and the Human Spirit. First Touchstone ed. New York: A Touchstone Book published by Simon and Schuster.

C. Choice of Conference Documentation

The choice of conference documentation was made on a pragmatic basis. Formally issued conference proceedings for national or provincial library conferences in Canada are rare. Indexing of Canadian library conference events in Library Literature or through the ERIC system is haphazard and infrequent. Conference calendars proved to be very briefly

worded and were often only vaguely indicative of the ideas discussed at conference sessions.

It had been previously decided that conference documentation for the years 1980 to 1986 should be studied. Therefore, all the issues of Canadian Library Journal and Feliciter, and all the provincial newsletters issued by the library associations of British Columbia, Alberta and Manitoba were perused. Saskatchewan news was gleaned from Saskatchewan Library Focus, the organ of the Provincial Library System.

D. Analysis of the Method Used

The historical method of research was considered to be the most appropriate to the thesis objective, namely, identifying in selected 1980-1986 library conference presentations, reflections of certain ideas prevalent in the social forecasting literature. The aim of the research fits within the general goal of historical research as articulated by Leedy:

> The historical method aims to assess the meaning and to read the the message of the happenings in which men and women and the events of their lives and the life of the world around them relate meaningfully to each other. (Leedy, 1980, p.117)

In keeping with the historical approach, documented evidence was relied upon and primary sources were used extensively.

Because certain techniques used in historical research are similar to techniques employed in content analysis, the latter was explored as a possible methodology. Similarities and differences may be briefly noted between the historical approach undertaken, and the content analysis method considered.

A key feature of content analysis is that the analyst creates categories for grouping verbal references, and those categories become the basis for generalization about the content of the larger source. Content analysts generally allow that the inherent nature of the research determines whether or not statistical treatment of the data within categories might be appropriate.

The research undertaken for this thesis used a categorization procedure for grouping units of evidence. The categories consisted of selected major themes discussed in the key works. The units of evidence were the ideas and themes explored at the conferences as they were reported in the newsletters and journals. However, unlike certain types of subject matter amenable to formal content analysis the units of evidence analyzed here were too few for statistical treatment (nor was this the intent of the study).

As was stated earlier, Canadian conference documentation is incomplete. One cannot establish a "universe" of concepts for any given conference, let alone for all of the relevent conferences. A failure to see written evidence of the exploration of a key concept might just as easily mean a reporting failure as a failure on the part of librarians to discuss the topic. Therefore, only very general observations were made about the relative importance of the key concepts on library conference agendas.

To continue, in content analysis, written texts are used as the basis for inferences about larger informational sources; however, the inferences generally concern the characteristics of the text, not its

content. For example, Coughlin and Snelson used a content analysis approach when they examined all the papers given at a single Association of College and Research Libraries conference, looking for stylistic characteristics that might distinguish the research papers from the position papers and status reports. (Coughlin and Snelson, 1983.) Krippendorff clarifies such a process when he suggests that there is general agreement upon what content analysis is not:

> Content analysts are rarely interested in what messages are intended to mean. Hidden attitudes, the identity of authors, statistical trends of symbolic forms, and the like have fascinated a number of analysts while conscious intentions appear merely as a more specialized target of inquiry. (Krippendorff, 1969, p.5)

By contrast, the research undertaken here looks for "internal evidence" or meaning as defined by Leedy:

> In considering a manuscript or statement, the researcher asks such questions as 'What does it mean?' 'What was the author attempting to say?' 'What thoughts was he trying to convey; what inferences or interpretations could be extracted from the words?' (Leedy, 1980, p.120)

This research dealt with intended meaning and assumes conscious intention on the part of writer, speaker, and reporter. Hence, it is in the historical mode rather than the content analytic mode.

III. PROJECT FINDINGS

A. Review of Key Works

1. Marshall McLuhan (1966). Understanding Media: The Extensions of Man

McLuhan's thinking on the issues arising from the changing nature of information and its impact on society is generative. His work has given rise to cliches of sociological and educational writing that are no longer even credited to him -- "global village," (McLuhan, 1966, p.20) "the medium is the message," (p.23) "Age of Information". (p.48) More importantly, he draws attention to the profound psychological changes wrought by each emerging form of communication media, and to the power of those psychological changes to effect major societal change. McLuhan's writing is so rich with original and prophetic concepts that trying to speak of the major theme of his work leads easily to oversimplification. It is somewhat fairer to McLuhan to identify in his writing clusters of ideas to which he returns again and again.

Two such clusters are of great importance to this research: first, his thoughts on the impact of the phonetic alphabet and the medium of print; second, his ideas on the effects of accelerated communication processes. McLuhan contrasts the analytical and abstract nature of the phonetic alphabet with the "inclusive gestalt" (p.87) provided by the ideogram. The alphabet, because it schools the power of analysis and sequential thinking, is a natural ally of a mechanized world. Assembled as print or writing, it captures human events and extends them through time, creates written codes of law before which all men are equal, and removes man intellectually from human action, creating a psychological separateness. Says McLuhan,

> ...the phonetic alphabet alone is the technology that has been the means of creating 'civilized man' -- the separate individuals equal before a code of law. Separateness of the individual, continuity of space and time, and uniformity of codes are the prime marks of literate and civilized societies. (p.87)

The second great cluster of ideas centers around McLuhan's perception of media as "the extensions of man." McLuhan identifies a cycle of human inventiveness: stress giving rise to invention which is merely an extension of a human capacity (as the wheel extends the foot); a great amplification -- speeding up, perhaps -- of the human action as a result of the invention; an inability of human perception to fully and physically comprehend the amplified action (the rotating feet); the psychological blocking of that which cannot be perceived; and finally, a Narcissus-like infatuation with the invention as if it were a thing apart from self. (p.52)

This cycle aptly describes our current enchantment with computer technology. McLuhan's thoughts on the latter are intriguing as well:

> With the arrival of electric technology, man extended or set outside himself, a live model of the central nervous system itself...a desperate and suicidal autoamputation, as if the central nervous system could no longer depend on the physical organs to be protective buffers against the slings and arrows of outrageous mechanism. (p.53)

Prophetically, McLuhan suggests that as automation takes hold, information itself becomes a commodity. (p.48)

The media are our inventions. They accelerate human communication; they numb and they enchant. It is their psychological impact that McLuhan refers to when he says,

> ...the media is the message. This is merely to say that the personal and social consequences of any medium -- that is of any extension of ourselves -- result from the new scale that is

> introduced into our affairs by each extension of ourselves, or by any new technology. (p.23)

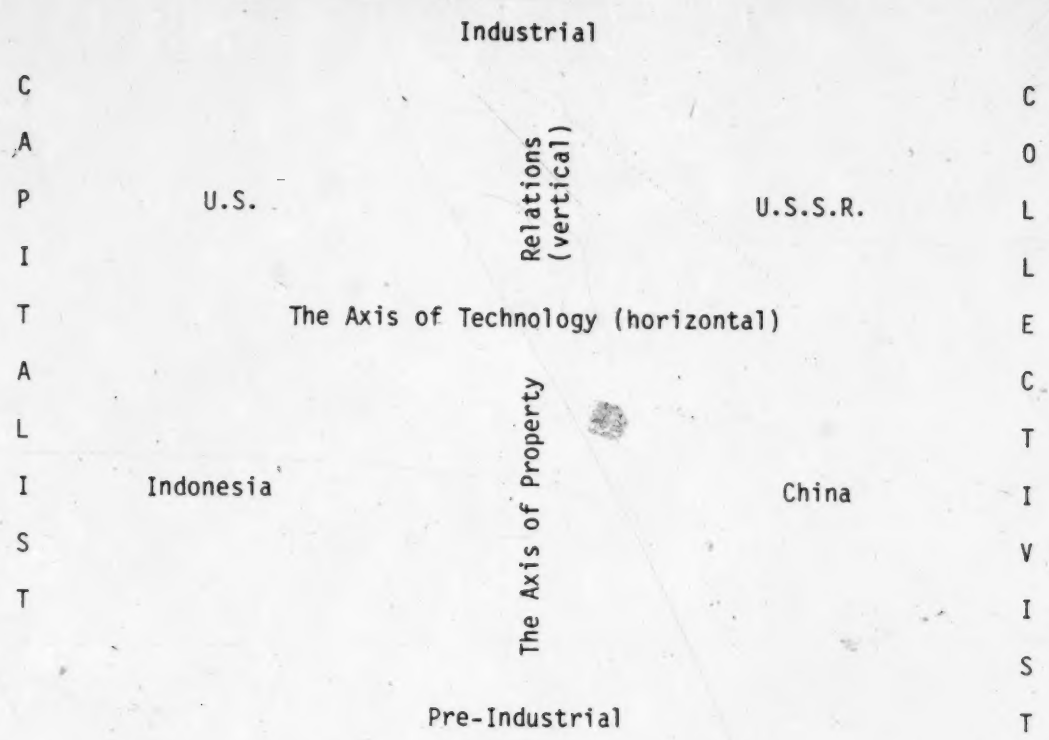
From these thoughts arise McLuhan's definition of the "hot" media, those which extend one sense in "high definition," flood one sense with data. Print and radio and movies fall into the "hot" category. By contrast, the "cool" media -- cartoons, the telephone -- leave much to be filled in by the recipient; they invite participation.

In sum, McLuhan's views on the linearity of thinking which typifies literate man, on the accelerated and fundamentally changed nature of human communication brought about by the media, and on the psychological and social impact on humankind of that change, are views that form an infrastructure for all thinkers on these matters who follow him.

2. Daniel Bell (1976). The Coming of Post-Industrial Society: A Venture in Social Forecasting

The work of Daniel Bell builds on a long line of social and political thinkers. He acknowledges St. Simon's vision of technocracy, an industrial society based on knowledge, ruled by reason, and characterized by its reliance on science and technology. (Bell, 1976, p.76) He notes Auguste Comte's contributions -- the founding of sociology, the concept of a "rationalist progression of society from theological to metaphysical to a scientific stage." (p.55) He discusses the "pervasive ethic" of bureaucracy described by Max Weber, the "norms of impersonality, the emphasis on performance and achievement, the criteria of efficiency based on least cost." (p.75)

To a great extent, Bell's thinking is a reaction to the writings of Marx, an examination of the facts of present day society as they either accord or do not accord with the labour theory of value and economic determinism. As he strives to "uncouple the two dimensions" of Marxist thinking (p.xi) in which social relations are dependent upon technological control, Bell evolves a new paradigm for analyzing the sociotechnical dimensions of a society. In Bell's scheme, there are two axes: the axis of property relations and the axis of technology. In his model, capitalist and collectivist societies can be viewed as similar if one divides the countries by the axis of technology. Bell uses the figure below to graphically illustrate his point.



(Figure from Bell, 1976, p.xi) (modified from original)

A major modern influence on Bell is Radovan Richta who worked with a research team of the Czechoslovak Academy of Science. Richta wrote the following work:

> Richta, Radovan. (1969). Civilization at the Crossroads: Social and Human Implications of the Scientific and Technological Revolution. English language ed. Printed in Czechoslovakia in 1968, distributed in the U.S. in 1969. White Plains, N.Y.: International Arts and Science Press. (c1967)

Certain thoughts appearing in the Richta work underlie Bell's major predictions. Following Richta, (1969, pp.27-28) Bell suggests:

> In effect, not labor power (and the working class) but science (and knowledge classes) is the 'decisive factor' in the growth of the productive forms of society. (Bell, 1976, p.107)

Bell proceeds with the following quotations:

> In other words, science is emerging as the leading variable in the national economy and the vital dimension in the growth of civilization. (Bell, 1976, p.107 quoting Richta, 1969, p.39)

> In general, we can assume that in the course of the scientific and technological revolution the volume of 'services' will grow to the point of occupying 40-60 percent of the national labor in the coming decades. The civilization to which we are advancing might accordingly quite well be called 'postindustrial civilization'... (Bell, 1976, p.108, from the work by Richta, 1969. pp.120-121)

On the strength of all that he has read and thought, Bell postulates eleven dimensions of "post-industrial" society: (p.xviii)

1. The centrality of theoretical knowledge;
2. The creation of a new intellectual technology based on linear programming, Markov chains, stochastic processes -- modelling, simulations -- and rational solutions;
3. The spread of a knowledge class; (By the year 2000 technical and professional classes will be the largest in society.)
4. A change in the nature of services; (Pre-industrial society relied on domestic labor, industrial society required transportation and financial services, post-industrial society will bring an emphasis on health, education, social services, professional services and computer services.)
5. A change in the character of work in which advocacy will play a key role;
6. A change in the role of women;
7. Science as "imago";
8. Political alignment according to function -- scientific, cultural, administrative or technical -- or institution --

government, military, economic, university, social complexes;

9. Meritocracy;
10. Scarcities of information and time;
11. The "economics of information," the need for society to cooperate in order to increase the spread and use of knowledge.

Bell's ideas about post-industrial society have had an obvious impact on the thinking of the social forecasters who followed him. Although Bell discovered, to his own chagrin, that he had not actually coined the term "post-industrial" (see his footnote #45, p.37), nevertheless his expansive and scholarly definition of the term gives him a legitimate claim on its usage. One writer who has read Bell, who cites him and who builds upon his thinking is Alvin Toffler.

3. Alvin Toffler (1980). The Third Wave

In The Third Wave, Alvin Toffler outlines three major divisions in the course of civilization: a First Wave agricultural phase; a Second Wave industrial phase; and the emerging Third Wave in which the nature of social organization is radically altered by advances in communications, space technologies, oceanography, and biological engineering. The latter, biological engineering, he predicts "may have the heaviest impact of all." (Toffler, 1980, p.146)

Toffler acknowledges that others have created labels for the emerging phase about which he writes, and he alludes to both Marshall McLuhan and Daniel Bell when he says,

> Some speak of a looming Space Age, Information Age, Electronic Era or Global Village...Sociologist Daniel Bell describes the coming of a 'post-industrial society.' (p.9)

Toffler identifies six "interrelated principles" that underlie the industrial phase:

1. Standardization -- the trend in industry toward the use of standardized procedures, parts and products. This trend was paralleled in the "info-sphere" by the distribution through the mass media of a "standardized imagery" expressed in standardized oral and written language; (Toffler, 1980, pp.46-49)

2. Specialization -- the division of labour which Toffler suggests gave groups of specialists the opportunity "to monopolize esoteric knowledge and keep newcomers out of their field..." (p.50) He goes on to say "All sorts of occupational groups from librarians to salesmen began clamoring for the right to call themselves professionals..."; (p.50)

3. Synchronization -- production line life, the coordination of efforts to facilitate work flow; (pp.51-53)

4. Concentration -- the concentration of workers in factories, and capital in the hands of a few was paralleled in the "socio-sphere" with the concentration of children in schools, lunatics in assylums, criminals in prison, and so forth; (pp.53-54)

5. Maximization -- "big" means efficient, a tendency toward "macrophilia" throughout the industrialized world; (pp.54-56)

6. Centralization -- the focus here is on centralization of power, with orders flowing up and down a bureaucratic chain of command.

Toffler suggests that ancient concepts of circular time and holistic space gave way to concepts of linear time and linear space, more suited to a production line world. (pp.105-109)

His thoughts are reminiscent of McLuhan's thoughts on the sequential and analytical nature of print -- the "natural ally" of a mechanized world.

For Toffler, a key factor giving rise to Second Wave civilization was the "divorce of producer from consumer" (p.117) and the growth of the exchange network or marketplace. The greater the market to be served, the greater the pressure toward standardization, specialization, synchronization and centralization. But now, says Toffler, "...the civilization that made the factory into a cathedral is dying." (p.128) The great centralizing and standardizing tendencies of Second Wave civilization are in reverse. Because of computerized production, industries can cater to thE demanD for customized products. Also because

of computers, humankind is led back to a state of "prosumption" in which people are once again the consumers of what they produce. Toffler sees this trend among the affluent taking the form of do-it-yourself gadgetry -- everything from hand drills to home computers. He predicts that society will come to recognize and remunerate the kind of work that is done for home consumption. He also predicts the rise of the "electronic cottage" the home work site linked by computer to the office.

Of greatest interest to the field of librarianship are Toffler's observations on the changing nature of the "infosphere." He notes the "De-Massifying of the Media" (chapter 13) and the emergence of audience specific newspapers, magazines, radio stations and television channels. He suggests that,

> ...we are besieged and blitzed by fragments of imagery, contradictory or unrelated, that shake up our old ideas and come shooting at us in the form of broken or disembodied 'blips.' (p.165)

As the media become demassified, as people retreat to their "electronic cottages" and start "prosuming" society will require a greater information exchange to achieve social coherence. (p.167) Personal computers will link people in "electronic communities." (p.170) Even government will be radically altered. Twenty-first century democracy will be "minority-based" because society will be too diverse and Balkanized for the formation of majority opinions. (pp. 419-427) There will be semi-direct democracy that utilizes advanced communications technology to keep the citizen informed and to enable him to register his opinion. In the world that Toffler envisions, the flow of information will be crucial to the survival of civilization.

4. Anthony Smith (1980). Goodbye Gutenberg: The Newspaper Revolution of the 1980's

Anthony Smith explores the information flow from the perspective of the newspaper industry. An underlying theme in his work is "the progressive externalization of information storage through the passage of centuries." (Smith, 1980. p.6) He suggests that the newspaper is a "microcosm of a new social information system." (p.xii) He also suggests that parallels can be drawn between the present transformation in printing methods, and the revolution brought about in human communication by the advent of writing and printing. Smith suggests that oral communication derives its authority from the speaker, that written communication seems "to exercise an authority of its own." (p.6)

In ancient and medieval times, the keeper of the exemplar, the original manuscript, had power over the information it contained. When the printing press produced a relative abundance of copies, ownership became vested in the author or publisher. With the advent of digitized information, Smith predicts a further change in the exercise of control over information, user control. The computer gives its operator the option to access whatever he wants of information, and to by-pass what he does not want. Smith refers to this process as a "switch in sovereignty over the content." (p.309)

The main focus of Smith's book is the impact of the new technologies on the newspaper industry. He examines both purpose and process in the production of the mass circulation daily. He looks upon the newspaper as an "information broker" to its society, (p.11) a link

between the new reading public and those with commercial messages to sell. Smith identifies three phases in the evolution of the newspaper:

1. Its role as a collector of broadsheets, a "menu" of information bought from advertisers and distributed to a wide audience;

2. Its logical development as a periodical so that it could promise its advertisers regular distribution;

3. Its evolution as an information creator (rather than mere printer) so that it could support its periodicity.

Smith's discussion then moves to the finanical difficulties facing newspapers since the 1960's, difficulties arising in part from the shift of the reading public to the suburbs, far from the newspaper printing plant, from rising fuel costs that exacerbate the distribution process and from the increasing expense of paper. He documents the progressive monopolization of a troubled newspaper industry by fewer and fewer news chains. He notes the challenge presented to the mass circulation daily by neighborhood weeklies and shoppers.

With regard to production, he documents the changes in workflow brought about by the computer which enable the newsgatherer to become, simultaneously, editor and compositor. He looks at the statistics derived from studies of newspaper readership, and he develops quite fascinating relationships between the need for immediacy in information and the need to reach audiences of greater or lesser numbers. He postulates that electronic publishing will take over the role of providing topical (current, ephemeral) information to moderately specialized audiences. It is this trend toward individualization of

information that Smith has in mind when he says,

> The computer will do more than help newspapers smear a fifth of an ounce of ink across a kilo of newspaper. It has the capacity to store and disseminate information in totally new ways, the capacity to give a person only what he wants and relieve him of the necessity of paying for what he does not. (p.15)

Smith's in-depth study of the impact of computerization on one particular print format gives pause for thought to the library world. In fact, Smith himself makes cogent statements about the past and future roles of the librarian. He consistently suggests a guardian role, originally as keeper of the examplar, now "sentinel at the gateway of information and knowledge." (p.314) He does, however indicate the evolution of the role, from mere keeper of the medieval documents to the organizer of knowledge with the coming of the upright book and traditional book storage. In fact, he says, "The library with its catalogue was itself a learning system." (p.10)

With the advance of electronic information, the librarian plays an increasing role in the categorization of information and its indexing -- on which, of course, its useful access depends. Smith's work was published before the end-user searching systems (for example, Knowledge Index, BRS/After Dark) became so readily available to the information seeking public. The provision of public access to such systems, along with basic instruction in their use, place the librarian in a role that makes prophetic Smith's question:

> Who has made the computer-librarian lord and master over knowledge and how is his stewardship supervised and rendered accountable to society? (p.314)

Whatever one calls the new people at work in the field of

information brokerage -- indexers, librarians, system specialists, database vendors -- the point about their power and their accountability is still relevant.

5. David Godfrey and Douglas Parkhill (1980). Guttenberg Two

Douglas Parkhill echoes McLuhan when he suggests that computer communications systems both multiply the human intellect without limit, and extend it in space and time (Godfrey, 1980, p.70) He suggests that various elements of the "Electronic Highway Network" will have a direct effect on social policy planning:

1. the cashless society and computerized shopping;
2. true participatory democracy via the "ubiquitous computer networks" (here, echoing an idea of Toffler's);
3. individualized computer assisted instruction;
4. medical information networks;
5. electronic publishing and specialized information utilities targeted at specific occupational groups (here echoing Smith). (p.71)

Parkhill then discusses technological issues (for example, the impact of packet-switching and optical fiber) and the Carrier/Content issue with which the Canadian government now contends. Parkhill makes the case for separation of Carrier from Content, thus ensuring distribution of information services on a non-discriminatory basis. On the other hand, David Godfrey in a later section of the same book points out that "the profits lie...with those who have managed to hang on to rights and power in both areas," carrier ownership and content control. (p.99)

Together, Parkhill and Godfrey bring to light the inherent

antagonism between the requirement for economic survival of the information provider, and the requirement for democratic distribution of information.

Godfrey goes on to develop his theory of "vulnerability coefficients" for each of the media and slates as the most vulnerable, newspapers, which run the risk of being replaced by electronic newsbroadcasting; academic and limited interest books, which may drop out of existence; and directories, "the perfect content for the new technologies." (p.121) Although Godfrey does not specify them, the implications of his theory for libraries, particularly academic libraries, are readily apparent.

6. Sherry Turkle (1984). The Second Self: Computers and the Human Spirit

Sherry Turkle, a projective psychologist, explores the impact of the computer on human beings as they develop from childhood through adolescence. She identifies three distinct stages of development:

1. first, a metaphysical stage when the young child is concerned with whether or not the computer is alive;

2. second, a mastery stage when the child wants to make it work, best it;

3. third, a stage (usually in adolescence) when the child's relationship with the computer is "polarized around the question of identity." (Turkle, 1984, p.19)

Much of Turkle's work is focused on the stage one child who is just beginning to encounter computers and computerized toys. Using an ethnographic approach (she does her research in school settings where children are interacting with computers), she re-explores children's concepts of animism, the animate versus the inanimate. Building on Piaget's findings about a child's concept of the natural world, she asks of hundreds of youngsters, "Is the computer alive?"

In Piaget's construct, children develop the concept of life by making finer and finer distinctions about the kind of activity that is evidence of life. One of their earliest associations is that of life with seemingly autonomous motion: people and animals move, everything else is inert. Turkle suggests that the introduction of the talking computerized toy disrupts this early association. She generalizes:

> The computer, standing between the physical and the psychological, between the animate and the inanimate, creates a new disorder and provokes the child to new conceptualizations. (p.32)

Later, she goes on to say,

> The computer provokes children to find ways either to deny it the status of a living being or to grant it a special kind of life. In the process it forces them to think about how machine minds and human minds are different and so enters into the development of psychological reasoning. (p.45)

Turkle's chief concern about stage two children revolves around the fascination of some with rule-bound, mathematical and procedural play. This tendency she explores at length in a case study of a child obsessed with Dungeons and Dragons. For him, and others like him, "Beyond the fantasy, there are always the rules." (p.83) She goes on to say:

> In all of this, something is missing, something that is abundantly present in the open-ended role playing that children offer each other when one says, 'You be the Mommy and I'll be the Daddy.' ...In this kind of play, children have to learn to put themselves in the place of another person, to imagine what is going on inside someone else's head. There are no rules, there is empathy. There are no dice to role, there is understanding, recognition, negotiation and confrontation with others. (p.83)

It would be wrong to suggest that Turkle's views about the impact of computers are pessimistic. Rather, as a projectivist, she sees the child bringing his own inherent style into his interactions with the machine. Based on her work with colleagues Seymour Papert and John Berlow, she observes two different approaches to computer mastery among children, "hard mastery" and "soft mastery." Soft masters work with the given elements of the computer; they communicate, negotiate, accommodate. Hard masters, on the other hand, control. They think in terms of abstraction, they plan and reason and direct. Turkle observes a

sex-linked tendency for girls to be "soft masters," although she notes several exceptions to the tendency. The key point, however, is that the computer can be approached and mastered by children of quite diverse intellectual proclivities.

It is as the human being enters the third stage that Turkle begins to see the computer as "Rorschach inkblot test," computer as "powerful projective medium." (p.14) In Turkle's view, the computer supplies an analogy, a metaphor for the mind itself. She says,

> For me, one of the most important cultural effects of the computer presence is that the machines are entering into our thinking about ourselves. If behind popular fascination with Freudian theory there was a nervous, often guilty preoccupation with self as sexual, behind increasing interest in computational interpretations of mind is an equally nervous preoccupation with the idea of self as machine. (p.24)

In Turkle's opinion, stage three adolescents and adults, as well, bring various styles into their interactions with computers. Likewise, she sees the danger of adults' becoming seduced by the rule-bound, artificial worlds they might create. Echoing McLuhan's observations about the Narcissistic trances in which our media may hold us, she says,

> Like Narcissus and his reflection, people who work with computers can easily fall in love with the worlds they have constructed or with their performance in the worlds created for them by others. (p.82)

Certainly, the library profession must question its own tendencies toward such Narcissus-like behavior with respect to the electronic technologies.

7. John Naisbitt (1984). Megatrends: Ten New Directions Transforming Our Lives

John Naisbitt derives societal trends from content analysis of two million "local articles about local events" appearing in American newspapers over the course of a twelve year period. (Naisbitt, 1984, p.xxiv) The "ten new directions" which he perceives are remarkably similar to those perceived by McLuhan, Bell, Toffler and Smith. Naisbitt identifies these directions as follows:

1. The "megashift" from an industrial to an information society;

Naisbitt's expansion upon this theme includes an allusion to McLuhan's vision of a "global village." (p.3) As well, without explicit acknowledgement of the extensive analysis done by Bell (although Bell is among his references), Naisbitt puts forward as a major concept:

> We need to create a knowledge theory of value to replace Marx's obsolete labor theory of value. (p.8)

Naisbitt also acknowledges Anthony Smith's idea that the "sovereignty" over a text is held by the user. As well, in this chapter, he expresses concern over the inadequacy of the public education system and suggests that:

> By one estimate, 75 percent of all jobs by 1985 will involve computers in some way -- and people who don't know how to use them will be at a disadvantage. (p.27)

2. High tech/high touch -- the need within a highly technological environment for increased human contact;

Without reference to Toffler, Naisbitt refutes the concept of the "electronic cottage."

> The utilization of electronic cottages will be very limited: people people will want to be with people. (p.43)

3. From a national economy to a world economy;

Naisbitt notes the globalization of the world's industries and suggests that "...as the Third World prepares to take over the major industrial tasks, the developed countries must move on to new enterprises." (p.72) Again an unacknowledged idea of Toffler's emerges as a key concept: "Biology is replacing physics as the dominant metaphor of society." (p.75)

4. From short term to long term;

Under this heading, Nasbitt discusses the need in industry for long range planning and "strategic vision," the need to sense the direction of change.

5. From centralization to decentralization;

Naisbitt puts forward ideas about the political and cultural decentralization of the United States that are reminiscent of Toffler's concepts of minority based democracy and the "de-massified media."

6. From institutional help to self-help;

The author predicts a decline of society's reliance on state supported health, education and welfare, suggesting that his nation will return to "home births." (p.145) and being "gardeners and gleaners." (p.169) He also suggests that neighborhoods will respond to crime with "self-help." (p.170)

7. From representative democracy to participatory democracy;

Naisbitt's ideas here correspond very closely with Toffler's. Naisbitt says that there will be semi-direct democracy that utilizes advanced communications technology to keep the citizen informed and to

enable him to register his opinion. Naisbitt also puts forward the idea that "Leadership involves finding a parade and getting in front of it." (p.178)

8. From heirarchies to networking;

Says Naisbitt,

"Networks offer what bureaucracies can never deliver -- the horizontal link." (p.219) Corporate efficiency will depend on rapid exchange of information among executives who take equal responsibility in the process of participatory management.

9. From north to south;

There will be a power shift in the United States from the northeast to the southwest.

10. From either/or to multiple option;

The basic building block of society is moving from the family to the individual. (p.161) A diversity of individual lifestyles will be socially acceptable.

Megatrends is a highly readable work; Naisbitt does not incline to the scholarly digressions of Bell, or to the intellectual explorations of Toffler. The concepts in Megatrends are kept simple and catchy. They are enumerated and briefly worded to facilitate the memory. Chapters are short, numerous subheadings and indentations enable speed reading. In sum, the work has all the earmarkings of a "popularizer" and the publisher's claim that it was "60 weeks on the New York Times bestseller list" would seem to substantiate its success as such.

B. Themes of the Key Works

The seven works above contain five themes of interest to this research:

1. A new form of society is emerging.

Bell has called the new order the "post-industrial" society and has suggested that it will be increasingly knowledge based, computerized, scientific and litigious. Toffler dubs it "third wave" society. In contrasting it with the agricultural and industrial phases of human history, he sees the emergent era as one in which advanced communications, space technology and biological engineering will revolutionize the human order. The production line world that made "the factory into a cathedral" is dying, and along with it, our social obsession with standardization, specialization and centralization. Toffler foresees a highly individualized social order in which semi-direct democracy gives a powerful voice to minorities. Naisbitt suggests that human beings will seek out each other's company as never before, that to offset the "high tech" of the new era, there will be "high touch."

2. Information will become the basis of the new economy.

The vision of an information based economy was seen in the 1960's by McLuhan who declared that information would become the crucial commodity. Bell talks about "the economics of information" and the spread of a knowledge class." He proposes an information theory of value in which "...not labor power (and the working classes) but science (and the knowledge classes)" become the "decisive factor in the growth of

productive forms of society." Anthony Smith focuses on the economics of one specific information industry, the newspaper industry. In the course of his explorations, however, Smith develops a much broader concept, that of "information brokerage" -- control over access to information. He suggests that there is a "switch in sovereignty" over content from the author/publisher to the user of information. Naisbitt's concern is with the growing need for computer literacy at a time when general literacy in U.S. society seems to be declining. He suggests that computers and keyboards are the "tools of the trade" for the executive in the information society and notes a "nationwide stampede" into university level computer courses.

3. The era of mass communication is ending.

Toffler discusses the "de-massification of the media," the development of audience specific newspapers, magazines, radio stations and television channels. (This concept parallels in the realm of communication Toffler's thoughts on the end of mass production in the industrial sphere.) Similarly, Smith's study of the economics and technology of the newspaper industry leads him to the conclusion that electronic publishing will provide topical information to specialized audiences -- one aspect of a trend toward individualized information. The theme is taken up by Parkhill when he discusses specialized information utilities serving occupational groups and the role of the computer in individualized instruction. Neither Smith nor Parkhill take up Toffler's prediction of the "electronic cottage" -- the home work site linked by computer to the office. Parkhill, however, does discuss the

concept of an "electronic highway network." As previously stated, Naisbitt, flatly rejects the idea of the electronic cottage, believing that people will still opt for the human contact of the office.

4. This era will bring about demise of print.

The replacement of printed paper formats by electronic publishing comes through very strongly in Smith's study of the newspaper industry and is echoed by Parkhill in his discussions of the "electronic highway network." Godfrey develops a whole theory of "vulnerability coefficients for various media formats including newspapers and books.

5. Electronic technology will have an impact upon the human psyche.

McLuhan's work is seminal in this area. He articulates the concept of the media as extensions of man; in particular, of electronic technology as an extension of the central nervous system. Certain of his suggestions were revolutionary twenty-five years ago and continue to be arresting today: the medium is the message; the personal and social consequences of the message result from its emotional impact; "hot" media flood the senses with data and that "cool" media invite participation.

Of the writers under discussion, Turkle is closest to McLuhan in her concern about the psychological impact of electronic technology. She focuses her attention on computers and computerized toys, examining in both children and adults psychological dependence on rule-bound, procedural activity. She considers computers in the context of human creative processes, noting the differences in her subjects between those who feel an urgency to control the computerized environment, those who communicate and interact with it.

Both McLuhan and Turkle make reference to Narcissus-like behavior on the part of humanity interacting with its electronic technologies. In Turkle's words, "...people...can easily fall in love with the worlds they have constructed or with their performances in the worlds created for them by others."

The five themes outlined above constitute the key concepts for which the search of the conference documentation was undertaken. Evidence resulting from that search is detailed in the section that follows.

C. Evidence of the Key Concepts

1. Concept One : A new form of society is emerging

From 1980 to 1986, news reports of the conferences contained frequent allusions to the first theme, the emergence of a new social era -- an information based, scientific and computerized, post-industrial society. Dr. Yoneji Masuda addressed the theme of social transformation very fully in his speech at the Library Association of Alberta Conference of 1982. He first predicted a political realignment, a "multi-polar" world in which Japan, Europe, Southeast Asia and the Arabian Gulf would present a challenge to American power. (LAA conference cullings, 1982, p.41) Masuda's thoughts in 1982 were contemporary with Naisbitt's on the rise of Third World industrial power.

Masuda emphasized the impact of the computer, suggesting that it "...is to learning processes what the nuclear bomb was to World War II." (p.41) He suggested that education would stress knowledge rather than technique and facts and would be a lifelong process. (p.44)

Somewhat like Bell, Masuda stressed that while information itself was public property, the information utility would form the basis of production for information "values." He went on to suggest that society would "function around the axis of information values rather than material values." (p.43)

Like Toffler, Masuda foresaw an end to the production line world with its classic division of labor as "...all work, creative energy and information can be instantly available." (p.43) As well, he suggested the elimination of certain forms of occupations and the rise of new Ones.

The impact of the new technologies on occupations was mentioned again in the news a year later. In 1983, Bill de John, the keynote speaker at the British Columbia Library Association Conference, stressed the importance of involving staff in the decision-making process regarding changes in the nature of the work place. De John was quoted as saying:

> People don't necessarily fear job obsolescence, as much as the breakdown of interpersonal relationships. They need to be part of the decision-making process, because without the cooperative human factor the new technology will not work. (Nichol, 1983, p.27)

That same year, at the Canadian Library Association Conference, Lois Bewley in her inaugural address announced:

> We have moved from a mechanical age where the test of a machine was satisfaction it gave us, into the machine age where we must adapt to satisfy the demands of the machine. We are becoming, as Thoreau said, 'the tool of our tools.' (Coping with the computer, 1983, p.1)

Bewley went on to stress the importance of making the computer serve and accommodate human needs in libraries.

Reports of CLA theme speeches and inaugural addresses continued to indicate interest in the social transformation being brought about by the new technologies.

Judith McAnanama, incoming CLA president of 1985, made direct reference to Gutenberg Two, The Third Wave and Megatrends in her inaugural address. In the address, McAnanama introduced her 1985 conference theme, "Information is power: Yesterday's prophecy, today's reality and tomorrow's economy." (Inaugural takes on new era, 1984, p.4) She went on to say:

> I have no doubt that the major trends predicted by John Naisbitt in Megatrends -- a decentralization and continued development of networks, an increased need for communication and human intervention, a control and synthesis of information -- will have an influence on your libraries... (p.4)

McAnanama's 1985 conference did indeed address the topic of the commencement of an information age. The theme speaker for this conference was Kristin Shannon, a futurist and chairman of Trans-Canada Social Policy Research which publishes Canadian Trend Report. She was also president of Pacific Rim Research which publishes American Trend Report.

In her address, Shannon noted the historical change in the economic base of western civilization from agricultural to industrial, from industrial to informational, "from muscle to mind." She suggested that "Information is the currency of the next economy." (Shannon, 1985, p.284)

Shannon outlined five skills essential to socioeconomic survival in the era to come: (pp.286-288)

1. Facility with Pacific Rim languages;
2. Knowledge of the biological sciences;
3. Computer literacy;
4. The ability to "multi-track" -- to be alert to multiple sources of information input;
5. The ability to do research.

The economic shifts that Shannon noted were quite like those identified by sociologists Bell and Toffler, and for that matter, Masuda, but there were no direct references in her speech to any of these authors.

Beth Miller, in her inaugural address at the same CLA Conference, indicated concern with the issue of social responsibility in a time of technological change. Miller observed:

> ...although the unfettered workings of the market system are enormously powerful in stimulating the development and application of many technologies, they cannot always be relied upon to steer technological development along socially appropriate paths. (Miller, 1985, p.294)

As her conference theme for 1986, Miller chose "L'information: Le virage humain: Information: People still count." (p.294)

In light of the documented evidence above, it is fairly clear that librarians and keynote speakers in the early part of the decade were communicating in sociological terms about the emergence of a new form of society, an information based, computerized civilization. CLA president, Judith McAnanama, made direct reference to the works of Toffler and Naisbitt and introduced the work of Godfrey and Parkhill. Theme speakers Masuda and Shannon alluded to their own writings which were roughly contemporary with those of Toffler, Bell, and Naisbitt, and which focused upon many of the same issues.

From such evidence, one may assume the exposure, either through conference participation or through the reading of professional newsletters and journals that covered the events, of a large proportion of Western Canadian library professionals to the concept that a new social order was emerging.

2. Concept two: Information will become the basis of the new economy

One specific aspect of that social order, information as its economic base, was of all the themes here discussed, the most frequently reflected. Of the fifty-three news reports and proceedings located and perused, more than half had as either their central or a major theme the economic impact on librarianship of an information based economy.

Returning to the reports of the 1982 LAA conference, keynote speaker Masuda laid heavy emphasis on the fact that information was becoming the new economic base of society. He announced that: "In the information society, the knowledge frontier will become the potential market." (LAA Conference cullings, 1982, 42)

The idea reappeared in Lois Bewley's CLA'83 inaugural address in which she stated, "...information is power and is becoming increasingly proprietary..." (Coping with the computer, 1983, p.1). Bewley voiced concern that proprietorship over information "if unchecked" could lead to "...a new form of poverty, an information poor class..." (p.1) In the course of her address she affirmed the responsibility of the library profession in ensuring that "the availability of information remains unrestricted." (p.1)

Judith McAnanama's choice of a 1985 conference theme, "Information is power: Yesterday's prophecy, today's reality and tomorrow's economy" (Inaugural takes on new era, 1984, p. 4) was indicative of her concern with the new economics. At the CLA '85 conference itself, theme speaker Kristin Shannon reinforced the message with her statement that, "If money was the currency of the last economy,

then information is the currency of the next one." (Shannon, 1985, p.284)

In September 1985, several of the speakers at the Toronto "Libraries 2000" conference dwelt on the economic importance of information. (Though "Libraries 2000" was an eastern based conference, one must accept its potential to influence the thinking of Western Canadian librarians, if only because of its coverage by Stan Skrzeszewski in the Saskatchewan Library Focus, and quite apart from the fact that westerners other than Skrzeszewski may have attended it.)

One report of this conference quoted John Leppick, consultant to the information processing industry:

> The fact that libraries are free is a terrible decision: it will keep libraries poor and out of the knowledge business. (Skrzeszewski, 1985, p.7)

According to the same source, Alan Gregg, President of Decima, observed

> ...fees for services is no longer a philosophic decision but rather an economic one brought about by societal needs. (p.7)

As well, Frank Feather, consultant to multinational corporations and world governments on future trends, echoed Lois Bewley's concerns about the monopoly of information when he said, "...we are developing a rich/poor information gap." (p.8)

National Librarian, Marianne Scott, keynote speaker at the 75th anniversary conference of BCLA in May of 1986, reiterated the concerns of Bewley and Feather:

> Society will be increasingly polarized into the 'information rich' and the 'information poor.' (Feature articles, 1986, p.12)

At the same conference, Elaine Bernard, Director, Labour Programs, Simon Fraser University, observed:

> Trends toward centralization and privatization of information databases imply that only those who can afford to pay for it will have limitless access to information... (Conference reports: Disenfranchised..., 1986, p.50)

None of the above speakers was clearly quoting McLuhan who saw information as a crucial commodity, or Bell who proposed an information theory of value to replace the Marxian labour theory. They neither cite Toffler's ideas about "prosumption" nor use his concept of the info sphere. Neither are they exactly quoting Naisbitt who suggests that the computer illiterate will be disadvantaged.

Still, the speakers were communicating the essence of what Bell, McLuhan, Toffler and Naisbitt had to say about the economic impact of digitized information, and one assumes that the librarians who heard them listened with concern to the message. At the very least, some librarians were concerned enough with the message to report it.

Still within the context of the economics of information, a considerable number of conference reports focused on the specific issues of information brokerage, the librarian as intermediary between the information creator and the information user.

In Anthony Smith's construct, the newspaper plays an information brokerage role for society. The librarian's role is that of gatekeeper, "...sentinel at the gateway of information and knowledge." (Smith, 1980, p.314) The literature arising from library conferences suggests that librarians were not debating their role as defined by Smith; they were

debating the "agency" role, not the "sentinel" role.

According to 1982 CLA Conference reports, conference attendees heard reassuring words from keynote speaker Dr. Heinz Von Foerster. He was quoted as saying that the librarian in a "dysfunctional society" is "one who can let know to those who need to know." ("Keynote speaker: To know..., 1982, p.1) Van Foerster also commented:

> A library is, of course, not a store of information nor a store of knowledge...it is a store of books, documents, microfiche files and some very clever people who understand how to pass it on to those people who want to know. (p.1)

At her inaugural address at the CLA '83 Conference, Lois Bewley also stressed the requirement for a human interface in the automated or "intelligent" library. She went on to announce the theme for CLA '84, "1984 and beyond: Human values in the computer age," and stated unequivocally, "...though we are information processors we are not information brokers." She concluded that statement with an indication of the true role of the librarian, "ensuring that the availability of information remains unrestricted." (Coping with the computer, 1983, p.1)

In 1984, at a CLA session entitled "The impact of automation on libraries," Marc Zwelling, a futurist, was quoted as saying that the impact of technology is to "de-skill, de-personalize and eliminate the middle man." He added that if libraries were a "middle person" then they would be replaced. (Cavill, 1984, p.15)

Zwelling's additional thoughts included alternative activities for librarians: selling books, providing consulting services, selling food in the library, providing child care, and getting into advertising

and lobbying. (p.15)

The issue of information brokerage continues to appear in the conference reports of 1985. Panellists at a BCLA conference session on "The end user and the library" concluded that a librarian intermediary would always be necessary because end user systems and end user manuals were too complicated for anyone but an expert to use successfully. (Keller, 1985, pp.22-23)

An announcement in Feliciter of a CLA '85 workshop spelled out basic concerns:

> Samuel Rothstein will outline the traditional role of the reference librarian and will discuss the possible impact current developments will have on job responsibilities and career development opportunities. He will also cover whether libraries will be bypassed as more information becomes full text. (Stage set for CLA'85, 1985, p.3)

At the CLA conference that year, Ula de Stricker, Micromedia, and Vivienne Monty, York University, assured their workshop audience that the librarian as an intermediary in the research process is essential. Said de Stricker:

> People get the impression they don't need a corporate librarian, just a desk top computer. I get many calls from end users who are totally frustrated. (Bases take on books, 1985, p.6)

Monty, in discussing the nature of undergraduate reference service noted:

> Even end user searches cause problems. Librarians have to show end user how to do them and that takes staff time... (p.6)

The Feliciter report of the CASLIS workshop at CLA'85 left no doubt about professional concern with the information brokerage role; its headline read: "Librarians need to remain at the centre of information."

(Librarians need to remain, 1985, p.12) The article quoted Pat Acton, Acton Information Management:

> Librarians will survive the integration of functions within organizations, but libraries will not. (p.12)

The comments of Ron Derynck of Home Oil, Calgary were noted in the same source:

> American stock exchange quotations are now accessible immediately through personal computers... (p.12)

Derynck seemed to imply that the information broker was soon to be bypassed.

On the brokerage topic, too, Skrzeszewski's coverage of the "Libraries 2000" Conference was helpful. He quoted Alan Gregg, President of Decima:

> ...libraries must move out into the workplace and operate as educators and knowledge givers... (Skrzeszewski, 1985, p.7)

and Robert Russell, lecturer and policy advisor on information technology:

> ...work is currently underway to design an electronic librarian (INEX) which would handle data base searches... (p.7)

The conference themes of 1986 continued to reflect librarians' concerns over the security of their professional future. That concern seemed evident in the advertisement for the 1986 provincial conference which listed various conference sessions including: "Online libraries," "Impact of home computers," "Facsimile transfer," Architectural implications," "Librarians without libraries." (Librarianship and libraries..., 1985, p.32) The titles of the sessions suggested the possibility for further examination of the information brokerage role;

however, there was no clear link between these sessions as described in the advertisement, and later conference reports.

The CLA '86 conference theme had been set in 1985 by incoming president, Beth Miller, "L'information: Le virage humain: Information: People still count." (Miller, 1985, p.294) In 1986, Quill & Quire announced a conference session concerned with the intermediary role of librarians: "Instructing end users in online bibliographic searching -- expanding the orientation role of librarians." (CLA '86: The French connection, 1986, p.6). The headline in itself suggested continuing concern with the brokerage topic. The 1986 conference featured speakers who painted an optimistic picture. Denis Varloot, though he was quoted as saying, "Technology has turned the world of librarianship upside down..." (Varloot, 1986, p.307) went on to suggest that computers are taking over the manual and technical tasks but that new roles emerge for the librarian.

> The library is no longer a book depot. It is now a centre offering services. The professional's relationship to the user has been completely revised. The librarian now acts as interface between the user and information. (p.308)

Douglas Foskett, took a similar stance on the issue of brokerage. He predicted high level information services that would exploit the computer in the extension of "current awareness services." (Foskett, 1986, p.312) Like Anthony Smith, Foskett saw a central role for the librarian in applying a classification scheme, organizing materials on the shelves, and creating "an intellectual structure" for knowledge. (p.315)

Inherent in the information brokerage issue was the question of

information ownership. The opinion of the library world reflected Anthony Smith's prediction of "a switch in sovereignty over the content" from the creator to the user of information.

At CLA '84, the Honourable Francis Fox, Communications Minister, announced with regard to the new copyright legislation:

> ...the creator takes precedence over the consumer...This could have significant impact on both libraries and library users, consumers of written and audiovisual creations. (Mark, 1984, p.18)

Taking the "consumer" view, National Librarian Marianne Scott addressed the BCLA 75th Conference as follows:

> In the next decade, delivery systems such as electronic mail and telefacsimile equipment will be as standard as telephones and photocopiers are today. Equipment which will allow us to make, photocopy, and read optical discs will be commonplace, especially in libraries which serve as central repositories for research collections. (Feature articles, 1986, p.13)

Finally, Denis Varloot also commented on the ownership issue:

> New technologies bring onstage new actors: specialized engineers and service companies. Otherwise, the dominant role is reassigned to the user at the end of the line. (Varloot, 1986, p.308)

The inherent contradiction between the user protective and the creator protective approaches suggested an emerging issue; technology and legislation in this respect were on a collision course. Judith McAnanama may have had this possibility in mind when she stated:

> CLA not only affirms in principle the protection of the economic and moral rights of the creator of the work, but also wishes to draw the federal government's attention to the need to protect the interests of the users. (McAnanama, 1985, p.291)

In summation, it cannot be shown that librarians debated Anthony Smith's views on either librarianship or ownership of information. Neither can it be shown that they have read and rejected out of hand his

view of their professional role. In fact, the material studied yielded not one direct quote from Smith. Yet, somehow, the issues of information brokerage and sovereignty over the content of information -- issues well explored by Smith -- have arisen in a parallel way in the professional discourse of the library world. It can be observed that Smith was cited by Naisbitt, and that Naisbitt was mentioned by name at library conferences, but that observation is far from conclusive evidence of Smith's influence.

All that can be conclusively stated is that whether by some sort of societal osmosis, or by intellectual coincidence -- certainly not by direct debate of Anthony Smith's work -- there were clear reflections of the information brokerage theme in library conference workshops and conferences.

3. Concept three : The era of mass communications is ending

The third concept, the end of the era of mass communications, was not explicitly expressed, but was certainly implicit in the conference literature studied. Speakers at conferences addressed the issue of self-education, which, in a library context, implies self-selection of subject matter and learning materials. In an individualized learning environment facilitated by the use of a wide variety of electronic media, including computerized information networks, the student takes what he wants of information and leaves what he doesn't want. Thus, the information gathering process becomes "demassified" in the ways perceived by Toffler, Smith and Parkhill.

Masuda's comments on the impact of computers on the learning

process have already been noted. He also suggested that "...the present closed educational environment will be replaced by an open educational environment made up of knowledge networks." (LAA conference cullings, 1982, p.44) For Masuda, the "open environment" was one that would permit personalized education suited to the ability level of the individual and to lifelong "self-learning." (p.44)

The published address of 1983 CLA theme speaker, Brooke E. Sheldon, Director of the School of Library Science, Texas Women's University, indicated that Sheldon, too, held a vision of self-instruction in the library context.

> Libraries will be the one place where individuals can, at their own pace and in a secure environment, test and become familiar with microcomputers, the videodisc, systems like Telidon and other technology as it emerges. (Sheldon, 1983, p.307)

Along with the self-instruction concept, library conference speakers discussed the development of information networks. Much of this discussion was technological and dealt with newly developed hardware, software and protocols for interfacing information systems.

The July 1982 Feliciter reports Edwin Buchinski's discussion at CLA '82 of the INET trials. (New technologies previewed, 1982, p.12)

Lois Bewley's already quoted inaugural address recommended:

> ...a scheme of bibliographic and electronic information networks, and facsimile or digital transfer involving all types of publicly funded libraries to meet the challenge. (Coping with the computer, 1983, p.1)

Throughout 1984 and 1985 the professional newsletters contained reports about both computer networking and the need for computer literacy:

Letter of the LAA reported Francis Fox's announcement at CLA'84 that the National Library would have project funding for the then piloted INET communications system. (Mark, 1984, p.18)

Feliciter quoted McAnanama's 1984 inaugural address:

"...introduce computer literacy programs in our libraries." (Inaugural takes on new era, 1984, p.4)

In April of 1985 Feliciter reported that the Manitoba Library Association, the Manitoba School Counsellors Association and the Manitoba Telephone System had cooperated to produce a video teleconference on "Interlibrary loan and the DOBIS system." (MLA promotes careers, 1985, p.9) Videoconference participants were 211 kilometers apart in Brandon and Winnipeg.

That same month, Feliciter announced that CACUL was developing a CLA conference workshop on library services for off-campus and distance education students. The workshop was to concentrate on individualized services such as telephone access, literature searches, and bibliographic instruction for post-secondary and adult learners. (CACUL holds new workshop, 1985, p.7)

In May, Feliciter announced a CLA '85 conference program on a "...user-friendly front end package for CAN/OLE," to be demonstrated by Liz Westel of Anneliese Arenburg Consultants, Inc. (Online users to hear update, 1985, p.6)

There was a June 1985 announcement of the Library Instruction Interest Group's plan for a CLA session on "...the use of videotex as an educational tool in health science settings." The key speaker at this

session was to be Margaret Taylor, Director of Library Services, Children's Hospital of Eastern Ontario in Ottawa. (Stage set for CLA '85, 1985, p.3)

The BCLA Reporter noted Marianne Scott's comments in her address to the 1986 BCLA Conference:

"Courses for the functionally illiterate will be supplemented by training in the use of new technologies for adult computer illiterates." (Feature articles, 1986, p.13)

Finally, at CLA'86, theme speaker Denis Varloot commented at length on the impact on libraries of electronic networking. He noted the creation of Transpac, an inexpensive data transmission network, the drop in cost of microcomputer work-stations, the development of user-friendly interfaces. He suggested that these technological developments would have an impact on "...local communities, universities and educational institutions rebuilding their information structures." (Varloot, 1986, p.307)

As initially stated, there was no direct evidence that librarians heard discussed the "demassified media" or the individualization of information in precisely the terms of Toffler. More like Parkhill, conference speakers focussed their thoughts on individualized instruction in an electronic environment, thereby indicating a concern with the time honoured role of the library in adult self-education. In particular, speakers expressed concern for the disadvantaged client, the illiterate, the computer illiterate, the information poor. In tandem with these concerns, they maintained awareness of the technological developments

leading to interfaced electronic information systems. Despite the lack of specific allusions to the "electronic cottage" concept, the collective mindset of the profession, as it was evinced in library conference literature, seemed to be focused on this aspect of the Tofflerian vision.

4. Concept four : this era will bring about the demise of print

The fourth concept to emerge from the key works, the demise of print, was very much in evidence as a library conference theme. It should be stated here that the library literature dating back into the 1970's contains abundant explorations of this theme, most notably by F. W. Lancaster. The topic, then, cannot be considered new to the world of librarianship or necessarily inspired by the thoughts of Bell, Toffler, Smith, Parkhill or Naisbitt. None the less, it is interesting to note where the theme appeared.

At the 1983 BCLA Conference, Bill de John predicted "...facsimile transmission, microcomputers, publishing of books on demand with laser printers." (Nichol, 1983, p.27)

Several references to the theme were made in 1985. CLA's Serials Interest Group announced in May that Marcia Tuttle, a serials specialist from the University of South Carolina, would address their group at CLA '85 on various matter including "electronic journal article publishing." (CLA '85 group to be busy, 1985, p.5)

Also at CLA '85, at a workshop on business information, Gale Fisher, Librarian at Home Oil Calgary opined: "Paper is going the way of the dodo bird... "(Bases take on books, 1985. p.6)

Later in that year, Frank Feather told the "Libraries 2000" conference delegates in Toronto:

> ...information is moving away from print to an electronic media; the print age is passed; books are only collectors' items. ...libraries which emphasize data base access will survive. (Skrzeszewski, 1985, p.7)

At the BCLA Conference of May 1986, Marianne Scott predicted:

> A smaller proportion of library budgets will be spent on books. Savings in this area will be turned over to the provision of staff and database services. (Feature articles, 1986, p.12)

At CLA '86, theme speaker Douglas Foskett put the issue into historical perspective with the following comments:

> It certainly does happen that a new technology may lead to the demise of its predecessors;...But this is a rather rare occurrence... (Foskett, 1986, p.311)

Foskett suggested that new technologies often establish themselves in tandem with the old. He said:

> ...the possibility of mass reading did not, as was thought by some, also mean the extinction of lectures and lecturers. I stand here as evidence that the new communications technology did not completely supersede the ancient art of oratory. (p.11)

He continued:

> We still learn to write long after the invention of the typewriter, and I see no sign of the word processor being any more successful in replacing this basic skill. (p.11)

Concluding his thoughts on the theme, he said:

> ...when I hear talk of the 'paperless society' arriving by the year 2000, I remain completely skeptical, particularly when I also learn that some 60,000 new books were published in 1986 in the United Kingdom alone. (p.11)

Foskett presented a resolution to the issue which was addressed in somewhat alarming terms the year before. Print would not "go the way

of the dodo bird"; it would continue to exist along with the electronic media so long as it remained a human convenience.

His thinking was not particularly at odds with that of Smith or Parkhill who made it quite clear that only certain types of printed format are vulnerable to displacement -- newspapers, limited interest publications, directories. More to the point, however, for the purposes of this study, Foskett did not seem to be particularly aware of Smith or Parkhill. His reference to a "paperless" society could just as easily be an allusion to the Lancaster work, Toward Paperless Information Systems, Academic, New York, 1978.

None of the speakers cited above gave evidence of having read Smith or Parkhill. As stated at the outset, the idea of the replacement of print by electronic formats seems to have a life of its own in library literature.

5. Concept Five : Electronic technology will have an impact upon the human psyche

Theme five, the impact of electronic technology on the human psyche, seemed to come into its own as an issue at CLA '86. Certainly, there was evidence of concern with the topic in earlier conference reports. Masuda in 1982 sounded McLuhanish when he spoke of "knowledge creation" as a concrete example of the "amplification of mental labor" through computer technology. (LAA conference cullings, 1982, p.42)

In the same year, Dorothy Singer of Yale University's Family Television Research Consultation Center addressed CLA delegates on the threat posed by television to children's literacy. She commented on the

constant interruption of programming by commercials, on the rapidity and fragmentation of the ideas presented in children's programs. In her words:

> T.V. doesn't allow time to stop and make associations for vocabulary development...heavy viewers exhibited the least development. (T.V. endangers children's literacy, 1982, p.10)

She also noted that children who watch action shows display the most agression.

Beth Miller quoted Arthur Kroker (author of Technology and the Canadian Mind: Innis, McLuhan, Grant. (1984) Montreal: New World Perspectives.) in her inaugural address to CLA '85. She said, "...technology is now the deepest language of politics, economy, advertising and desire." (Miller, 1985, p.293)

Also at CLA '85, there was a session entitled, "What does it mean to be literate in an information society?" At this session, Sheila Pritchard, Learning Resources Consultant for the Edmonton Public School Board commented, "the ability of students to distinguish between what is meaningful and what is noise is a key element in the instructional process." (No small undertaking, 1985, p.9)

At CLA '86, two major speeches deal with theme five. Douglas Foskett first spoke of the release of "intellectual energy" from "repetitive processes" that the new technologies can effect. (Foskett, 1986, p.312) Later, he turned his attention to thought processes, distinguishing between convergent thinking in which phenomena are observed in relation to a narrow objective, and divergent thinking in which a wide range of phenomena are examined for similar patterns. (p.313) He went on to remark:

> What distinguishes the human mind from that of animals...lies in our ability to form integrated structures of concepts in a pattern that has greater significance than the mere enumeration of the same concepts in random juxtaposition. (p.314)

Foskett then stressed the role of both books and librarians in creating an intellectual structure for human knowledge. Of books, he suggested that they provide. "...coherent systems of thought elaborated by a human mind." (p.316)

Of librarians he says,

> Through our classification schemes, through our wide range of vision in building collections, we have the unique opportunity to see the advancement of learning along the whole front. (p.316)

Like Singer and Pritchard quoted above, Foskett was concerned about the fragmentation of information:

> At no time in the history of human thought has there been a keener awareness of the seamless web that is the structure of knowledge, nor, perhaps a greater danger of its fragmentation into a jumble of bits. (p.316)

At the same conference, in his inaugural address, incoming CLA president Ken Jensen discussed the impact of the computer on human thinking:

> If our social nature is shaped by social memory, then that nature will be changed as the means we use to store and transmit that memory are changed. If our present knowledge base is organized on the principles of Linnaean classification, Indo-European grammar and print technology, how will it function in a world where the species concept is losing its hold as the existing principle of descriptive biology, linguistics and communications theory is revealing the subjective nature of mental categories, and computers are changing the objects of cultural transmission and their system of organization. (Jensen, 1986, p.330)

The above comments serve as evidence that library conference discussions about the impact of the new technologies on the human psyche

ran parallel to the discussions embodied in the writings of McLuhan, Turkle and Toffler.

Singer, Pritchard and Foskett did not directly say so, but their concerns about the fragmentaion of knowledge were similar to Toffler's worries about a 'blip' culture.

The comments of Miller and Jensen were reminiscent of Turkle's contention that computer technology enters into the development of psychological reasoning and that the computer itself would become a "projective medium," a "metaphor for the mind itself." Jensen in particular, observed that the social memory would change as the means used to record that memory change. Jensen was reminiscent of McLuhan who first sowed the seeds of the thought that "the medium" might well be "the message."

IV. PROJECT LIMITATIONS

The validity of the conclusions drawn from this study are greatly dependent upon the extent to which a very few parts -- newsletter reports, a few select speeches, seven published books -- represent the whole -- all that was actually said at library conferences, and the universe of social forecasting literature.

However, in the absence of systematic documentation of library conference proceedings, practicality dictated the use of news reports and journal articles. Tape recorded sessions from Canadian Library Conferences were not accessed because they are not comprehensive, and they are not systematically catalogued. That such sources were not used is another limitation of the study; if there exist tapes of whole CLA conference speeches on the impact on society of computer technology, these would be much more informative than brief news reports.

The pre-selection of social forecasting literature that dealt in some significant way with the impact of information technology on society skewed the research in favor of a positive result, the coincidence of librarians' and social forecasters' ideas. On the other hand, failing to select fairly narrowly from a field of great breadth could have resulted in a different sort of distortion, no evidence of coincidence of ideas at all.

Finally, it must be accepted that topics that are included in library conference programs, and which become the subject of news reports in library literature, are "of concern" to the profession. Accepting this approach limits the view of what constitutes library professional concern.

In sum, the success of the study is determined by the success of documented evidence:

1) news reports of library conferences as evidence of library professional concern;

2) trade publications as evidence of social forecasters' concerns.

Such evidence seems appropriate in terms of the subject of the study and the time period for its completion.

V. CONCLUSIONS

There is considerable evidence that the five key concepts derived from the social forecasting literature were reflected in what was written about workshops and conferences attended by Western Canadian librarians.

Library conference speakers discussed the evolution of human society from an agricultural, to an industrial, to an information-based socioeconomic order. They noted the characteristics of the dawning information age: computerized processes, the expansion of communication networks, the need for high levels of literacy and technological know-how, the need for lifelong learning. They recognized the elimination of the occupations and organizational structure of the industrial era. They noted the dangers of becoming enchanted with mechanism, becoming the "tool of the tools", as well as the risk of societal dislocation if technological developments are not steered along "socially appropriate paths."

Finally, they predicted the realignment of world power using as a boundary the axis of technology even where they did not refer to Bell or anyone else in conjunction with their approach.

If one accepts the initial assumption of the study that the organization, conduct and reporting of major conferences are an accurate reflection of the concern of the profession as a whole, then there is evidence that during the time period covered Western Canadian librarians were aware of and concerned about the first theme drawn from the key works, the emergence of a new form of society.

Theme two, information as the basis of the new economy appeared frequently in reports covering the major library conferences held from 1982 to 1986. Speakers discussed information as a market factor,

as currency, and as a source of power. They dwelt on the societal polarization that could occur should one sector of society gain a monopoly over information. Leading out of that concern there were many discussions of the role of the library professional -- not so much as information broker, but as a bulwark against monopoly, as an equalizing force ensuring the unrestricted availability of information.

To some extent, speakers indicated concern over professional career paths and job security. In the extreme, they predicted that sophisticated interfaces between user and database would constitute a form of electronic replacement for the librarian and that librarians would be well advised to seek alternative occupations. To a considerable extent, they explored the possibility of an enhanced role for the librarian as guide and educator of the information seeker. They saw both librarian and library as providers of an intellectual structure for knowledge.

Finally, they envisaged the power struggle between the creator and the user of information, as legislation increasingly protects the creator, and technology increasingly facilitates the user.

To summarize, with minimal direct quotation of McLuhan, Bell, Smith or Naisbitt, library conference speakers explored the issues that these authors raise. Once again, as stated in assumptions, if there is a tidal flow of ideas from conference forum, to general membership, and back again, then there is general professional "cognizance."

Theme three, the end of the era of mass communications, was the least directly explored at conferences involving Western Canadian

librarians. Speakers took up two strands of the theme: self-directed learning and research, and the technology of networking. They predicted a role for the library in the instruction of functional illiterates and computer illiterates, and discussed the library service component of distance education programs.

The documentation studied revealed no allusions on the part of conference speakers to Toffler's, Smith's, or Parkhill's ideas on the transformation of the information market into a multitude of highly specialized information channels aimed at very specific target audiences. Neither was there any evidence that the possibility of a minority based, semi-direct democracy was discussed.

Notwithstanding the fact that library conference speakers touched very lightly on the topic of electronic targeting of the information receiver, they dwelt directly with theme four, the demise of print.

Conference speakers as reported voiced a range of opinions covering the spectrum from the position that "paper is going the way of the dodo bird" to the position that print will continue to exist in tandem with the electronic information formats.

It cannot be proved that conference speakers gained any of their ideas about the fate of printed works from Smith or Parkhill, particularly because concern about a "paperless society" was expressed in library literature prior to the publication of Smith's and Parkhill's work.

Reports of discussion on theme five, the impact of electronic technology on the human psyche, were ample in their coverage of the

topic. They indicate that at least one speaker used the expression "the amplification of mental labor" which was very reminiscent of McLuhan. Another speaker considered the impact on children's language development and behavior of TV watching. Yet another paralleled Turkle's thinking with her declaration that technology is the "deepest language of politics, advertising and desire." Finally, a number of speakers expressed concern over the constant bombardment of the human mind with fragments of information rapidly delivered in electronic format. They spoke of the "fragmentation" of knowledge, not specifically alluding to Toffler's concept of a "blip culture," but expressing the essence of that concept. Speakers also perceived a vital role for the librarian in providing an intellectual structure, an organized framework for human knowledge.

In summation, four of the five key concepts abstracted from the literature of social prediction were very much in evidence in the news reports of CLA and provincial library conferences that Western Canadian librarians might have attended from 1980 through 1986. A fifth key concept taken from the literature of social prediction seemed implicit in the conference discussion but was not developed in the words of, or with reference to any of the authors of the key works.

If one accepts the initial assumption that conference issues are representative of the concerns of librarians, and that the social forecasters expressed their concerns in their books, then there is strong evidence that librarians and social forecasters had mutual concerns about the social impact of advanced electronic technology. Key concepts found in the social forecasting literature were addressed as key issues at

library conferences and workshops. Thus, the fundamental question regarding whether or not librarians shared with the social scientists and humanists mutual concern about the social impact of advanced electronic technology has been answered in the affirmative. While there are few direct quotations of, or references to the social forecasters in the documentation studied, the gist of what the forecasters were saying is strongly in evidence. Therefore, the hypothesis that the social forecasting literature would be reflected in what is written about library conferences and workshops is supported.

The major implication of this positive finding can be reasoned as follows:

with regard to the specific issues under investigation, conference speakers expressed views that were the same as those of the social forecasters;

the conference planners who selected the speakers must have anticipated and desired the messages that were delivered;

attendees of the conferences were exposed to social messages and reported what they heard.

It must be suggested, therefore, that the profession as a whole manifests in its planning of conferences, choice of speakers, attendance at and reporting of sessions, an active concern with the social impact of advanced electronic technology.

VI. SUGGESTIONS FOR FURTHER RESEARCH

The above research opens the way for a variety of other investigations. A question which arises naturally is whether or not what librarians heard or discussed at conferences actually changed their behavior in libraries. In a sense, such a study would pursue the course followed by Tassia who explored the extent to which a conference session might serve as a vehicle for continuing education. The research undertaken looks only for discussion of, "cognizance" of, the ideas of the social forecasters. The following questions remain unanswered: Did cognizance lead to action? Were there policy changes, program changes, changes in the nature of staffing and the library environment resulting from librarians' awareness of the social impact of advanced electronic technology?

The discovery that the conference documentation is incomplete, scattered, and unindexed suggests the need for two levels of research: first, a survey to determine the existing mechanisms for reporting proceedings; second, a study of what is needed in terms of staffing, money, publishing facilities, organizational structure, and a distribution system to ensure coverage of at least the annual major conferences of the national and provincial organizations. An obvious component of such a study would be a market survey to determine the level of financial and organizational support library professionals are willing to give to the systematic production of proceedings. This market survey should also ascertain the level of conference coverage librarians want.

The origin of librarians' awareness remains untapped by this thesis as a field of investigation. As suggested above, there are many

ways of knowing about a book's content without actually reading it. To carry the point further, there are many ways of gaining information without depending on the content of books. What methods do librarians use to gain information? How much information do they glean from conversation, from radio, television, movies, the theatre and visual arts? Are librarians observers, experimenters, note-takers--researchers in the scientific sense? How do librarians come to know? It is easy to assume that librarians gain personal knowledge from the informational resources that surround them in their institutions. Is it so?

An issue only touched upon in the thesis, but worthy of full investigation, is the copyright issue. The new technologies not only give the user "sovereignty over the content," they allow rapid, multiple transmissions of data, uploading, downloading, copying, and facsimile transmission. Meanwhile, the new legislation vests ownership in the information creator, protecting his or her legal and financial interests. At this time of writing, Canadian librarians have lobbied unsuccessfully to have a "fair dealing" clause included in the new copyright law. They are currently striving to slow down the mandatory establishment of collectives to calculate, collect and distribute royalties. There has been much speculation on the part of librarians about the impact of the new Canadian Copyright law and there have been studies comparing the proposed Canadian legislation with legislation in other countries. Soon it will be possible to begin documenting the historical realities; the impact of the new law on the provision of photocopying services and interlibrary loan services, its impact on budgets, institutional attempts to comply with or to skirt the law, the financial arrangements that

publishers, database producers, software and hardware manufacturers will make among themselves and with libraries to ensure affordable products and services. Finally, if both the law and the new technologies lead to one use per paying customer, there will be an effect on the fundamental library practice of sharing access to a few publicly supported copies. Events have advanced to the state where documentation rather than speculation about these concenrs is now appropriate.

Yet a further question is raised by the suggestion that librarians fall in love with the technologies they create -- or adapt to their own creative purposes. Are librarians Narcissus-like with respect to their infatuation with electronic databases? Have they set outside themselves and their institutions models of their own bibliographic files and catalogues, made them so vast, so complex, so swiftly and variously manipulated that the profession is now "numbed and enchanted" by what is to a considerable degree its own creation? Do librarians think like masters or slaves with respect to the advanced electronic technologies? What is the message of the new medium for the profession as a whole? A survey of professional attitudes in these respects is very much in order. Positive attitudes are a starting point in the acceptance of change. They underlie the sense of professional purpose. If, indeed, the profession is cognizant of the social impact of advanced electronic technology, it must know its own mind with respect to that technology in order to shape its own social role.

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